Homework 5

CMSY-217, Spring 2014

Upload your solution to the Canvas course website as a zip archive file prior to the start of class on Thursday, April 24.

The Social Security Administration provides a webpage (http://www.ssa.gov/OACT/babynames) with two interactive applications that allow you to display the most popular baby names for a selected year and track the popularity of a selected baby name over several years. The data are based on Social Security Card applications for years 1880 through 2012.

Popularity in 2012				
Rank	Male name	Female name		
1	Jacob	Sophi		
2	Mason	Emm		
3	Ethan	Isabell		
4	Noah	Olivi		
5	William	Av		
6	Liam	Emi		
7	Jayden	Abiga		
8	Michael	Mi		
9	Alexander	Madiso		
10	Aiden	Elizabel		
11	Daniel	Chlo		
12	Matthew	EI		
13	Elijah	Ave		
14	James	Addiso		
15	Anthony	Aubre		
16	Benjamin	Li		
17	Joshua	Natali		
18	Andrew	Sofi		
19	David	Charlott		
20	Joseph	Zoe		

2012 2011 2010 2009 2008 2007 2006 2005 2004 2003	11 10 9 9 10 16 18 19 23
2010 2009 2008 2007 2006 2005 2004 2003	9 9 10 16 18 19 23
2009 2008 2007 2006 2005 2004 2003	9 10 16 18 19 23
2008 2007 2006 2005 2004 2003	10 16 18 19 23
2007 2006 2005 2004 2003	16 18 19 23
2006 2005 2004 2003	18 19 23
2005 2004 2003	19 23
2004 2003	23
2003	
2002	24
	25
2001	30
2000	38
1999	63
1998	87
1997	109
1996	112
1995	136
1994	155
1993	158

The data have been placed in a Java DB (Apache Derby) database named babynames with a table for each year of birth that contains columns for name, sex, and number of births. Each table is named with the letters YOB followed by the four-digit year for which the data was collected. For example, the table YOB2012 contains the data for year 2012. Note that each name entry in these tables begins with a capital letter and is followed by all lowercase letters.

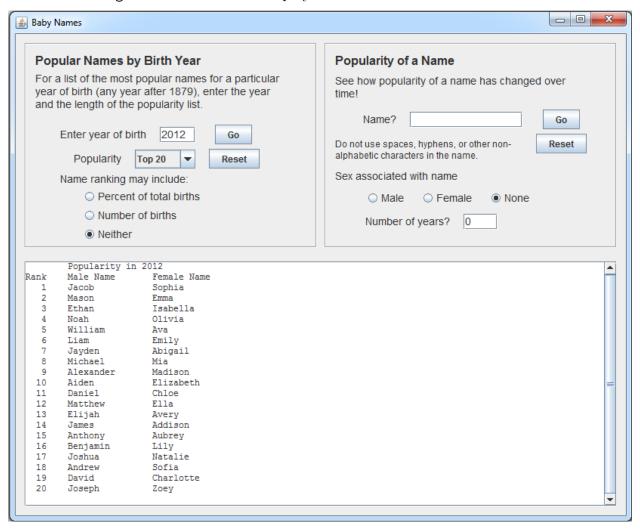
ij> DESCRIBE YOB2012	2;
COLUMN_NAME	TYPE_NAME
NAME	VARCHAR
SEX	CHAR
NUMBER	INTEGER

There is also a table called TOTALBIRTHS which contains the total number of births, by gender, for each year.

ij> DESCRIBE TOTALBIRTHS;

COLUMN_NAME	TYPE_NAME
BIRTHYEAR	INTEGER
MALE	INTEGER
FEMALE	INTEGER

The BabyNames class contains a Swing application that provides you with a graphical user interface (GUI) similar in appearance to the HTML forms on the Social Security website. In addition, the event-handling code has been written so that when the user clicks the Go button - a BabyNamesQuery object is created, the input parameters are passed to the getList or getRank method, and a results String is returned which is displayed in the JTextArea at the bottom of the GUI. The following figure shows the BabyNames application running with the results of a getList method call displayed.



- 1. Write the getList method in the BabyNamesQuery class using JDBC to provide the same functionality as the Popular Names by Birth Year application on the Social Security website.
- 2. Write the getRank method in the BabyNamesQuery class using JDBC to provide the same functionality as the Popularity of a Name application on the Social Security website.

The following SQL statements are examples of the String query objects that you could pass to the executeQuery method of the Statement interface to return a ResultSet object. Figure 28.23 from the textbook would be a good starting point for the necessary Java code.

```
FROM YOB2012
  WHERE SEX='M'
  ORDER BY NUMBER DESC, NAME ASC
  FETCH FIRST 20 ROWS ONLY
SELECT NAME, NUMBER
  FROM YOB2012
  WHERE SEX='M'
  ORDER BY NUMBER DESC, NAME ASC
  FETCH FIRST 20 ROWS ONLY
SELECT MALE
  FROM TOTALBIRTHS
  WHERE BIRTHYEAR=2012
SELECT NUMBER
  FROM YOB2012
  WHERE NAME='Chloe' AND SEX='F'
SELECT COUNT (NAME)
  FROM YOB2012
  WHERE SEX='F' AND NUMBER > 9595
  OR SEX='F' AND NUMBER = 9595 AND NAME<='Chloe'
```

SELECT NAME